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### Applicability of a possible robot taxation in Turkey

Ceyda Kukrer Mutlu <sup>(a)</sup>, Pinar Bengi Kaya <sup>(b)</sup>

<sup>(a,b)</sup> Faculty of Administrative Sciences and Economics, Afyon Kocatepe University, Afyonkarahisar, Turkey

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#### ABSTRACT

*The aim of the industrial revolution is to completely change the industrial processes. An important pillar of this change is the robots. With Industry 4.0, production will be completely transferred to robots capable of communicating with each other, recognizing needs with data analysis and detecting the environment with sensors. The inclusion of robots in the production process will reduce the need for human labor and this will lead to an increase in unemployment. For the purpose of solving this problem, in 2017 "robot taxing" was proposed by Bill Gates to the literature. The employers who choose to employ a robot are required to pay tax according to Bill Gates' proposition. These taxes will be used for the aim of reducing unemployment and helping to minimize the inequality of income. Turkey's fourth industrial revolution can be said to follow behind. However, it is still to prepare the policy in question. The problem of taxing robots is encountered. In this paper, it is aimed to evaluate the applicability of a possible robot taxation system in Turkey.*

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### Introduction

So far, four major revolutions have taken place in the field of production, one in the agricultural sector and the other in the industrial sector. From these revolutions, in the agricultural revolution, or the Neolithic revolution, people have passed from consumerism to production. The main difference that distinguishes this revolution from other revolutions is that man starts production. With the first industrial revolution, steam engines became applicable to the industry and the rail network became widespread. It has become possible to transport mechanized production and obtained products by rail networks. The second industrial revolution emerged with the use of electricity generation systems. In addition to mass production, the goods were delivered to the consumption centers by road in addition to railway. With the third industrial revolution, human labor in production was minimized and the automation of the production system became possible.

The fourth industrial revolution brought up by Germany involves many technological innovations and changes. Turkey is backward position for the fourth industrial revolution. Nevertheless, the issue of the taxation of robots, which have come up with the industrial revolution and will replace human workers, is also very important for our country. The taxation of robots is a controversial issue for the Turkish Tax System.

In our study, the development of industrial revolutions will be mentioned first. It will then be discussed in more detail in the fourth industrial revolution and status will be discussed in Turkey's fourth industrial revolution. Finally, the practicality of a possible tax robots in Turkey will be assessed under existing legislation.

### Conceptual Background

#### Development of Industrial Revolutions

Industrial revolutions are important milestones since the 18th century. Every revolution has not only changed the way of doing business and the foundations of life but also affected the social demographic structures, cultures and economic conditions of the countries. In fact, as a result of industrial revolutions, maps of some countries have been redrawn. The first beginning of this change was in England in the middle of the 18th century, but spread over time to Europe and the whole World (Pamuk ve Soysal, 2018).

\* Corresponding author. ORCID ID: 0000-0003-4002-6750

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Although all industrial revolutions have taken place in different periods, they have common features such as changing production processes and socio-economic structure. Thanks to the industrial revolutions, countries have had a higher production than they could have done. Thanks to the industrial revolutions, countries have had a higher production than they could have done. We are currently experiencing the fourth industrial revolution in which all countries have somehow adapted or attempted. It is clear that the fourth industrial revolution, which is the last revolution, will affect the whole world economically and socially with the acceleration of technological developments (Genç, 2018). Before moving on to the fourth industrial revolution that is so important, it would be appropriate to briefly refer about other industrial revolutions from the past to the present.

In the middle of the 18th century, a development called “Industrial Revolution” began and the life of societies underwent radical changes. However, the industrial revolution did not take place abruptly, but after a long period of preparation. These industrial revolutions fundamentally changed the production processes (Ayvaz Reis, 2010). First, the First Industrial Revolution, in other words, the Steam Machine Period, was realized by the end of the 18th century by the mechanical machines that provided more efficient use of water and steam power. One of the most important developments that led to this revolution was the steam-powered machine invented by James Watt in Scotland in 1763. With the revolution in question, human labor was replaced by machinery, the use of metals and metals increased and improvements were made in the field of transport (Çeliktaş, Sonlu, Özgel ve Atalay, 2015).

The Second Industrial Revolution began in the early 20th century. This revolution is the revolution in which electrical energy is used and mass production is the basis of the division of labor. In this revolution, mass production based on labor and powered by electricity was introduced (Kagermann, Wahlster & Helbig, 2013). The development of electrical technology and its use in production lines have provide to the further development of the machines and a significant increase in production. In the emergence of the Second Industrial Revolution, also known as the technology revolution, the development of the transport network, especially railways, played an important role. With the ease of transportation, the supply of raw materials became easier and the products produced reached new and remote markets.

In addition to the inventions produced in the Second Industrial Revolution and the new technological machines that were being used, a digital revolution was experienced in the Third Industrial Revolution. For this reason, the third industrial revolution is also known as the digital revolution. The records have been digitalized, and especially after the 1950s, innovations have been seen in the field of informatics and information science. Computer, digital products and the Internet are leading the this revolution. With the increase in new technologies and production capacities, new markets have also emerged (Özdoğan, 2017). With the use of electronic and information technologies together with the Third Industrial Revolution, programmable machines were used for the first time in production and the automation period began. This revolution continued until the 2000s (Aksoy, 2017).

The taxation of robots is in the fourth industrial revolution. therefore, this revolution will be discussed in more detail. Before making the necessary explanations, these revolutions are summarized below with the help of figures.

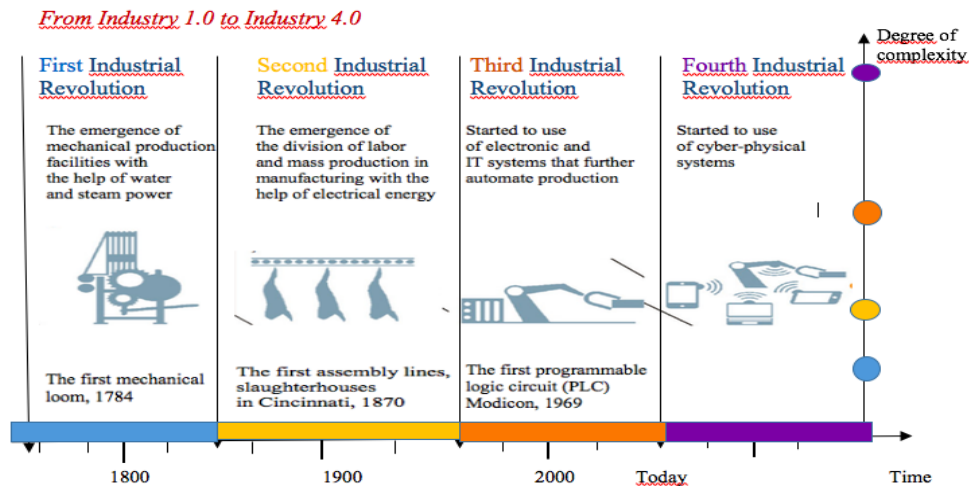


Figure 1: Industrialization Process; Source: Capital, 2013<sup>1</sup>

<sup>1</sup> <https://www.capital.com.tr/capital-dergi/gelecek-trendler/kendi-kendini-organize-ede-bilen-fabrikalarin-temelini-atmak>, 25.07.2020

The fourth industrial revolution, or Industry 4.0, was first introduced by Germany. This revolution came to the fore in 2011 at the Hannover Fair. We are experiencing the transition to the fourth industrial revolution, which is explained by the final report prepared in 2013 prepared by the Working Group of the German Government (Kılıç & Alkan, 2018).

The main objective of the fourth industrial revolution is to maximize computerization in the manufacturing industry and thus to equip production with high technology. This revolution has three aims. The first is the minimization of human labor in production and thus the elimination of errors in production. The second is to maximize the flexibility of production and thus to provide the possibility of producing consumer-specific products. The final objective is to accelerate production.

The fourth industrial revolution aimed to completely change the industrial processes. The revolution aimed to completely change the production processes. Robots constitute an important part of this change. With this revolution, production will be transferred to robots that can communicate with each other, realize needs through data analysis and detect the environment with sensors (Ertuğrul, 2016). The inclusion of robots in the production process will affect not only the blue collar but also the white collar. This situation is likely to cause long-term job losses and short-term labor market deterioration. Especially developed countries will be affected. because human labor in these countries is relatively costly in the production of goods and services. In such a case; the government may have twice the financial difficulty. For example, income from the taxation of labor is reduced and costs for unemployment benefits and public employment initiatives increase. In this case, increasing income inequality and high unemployment rates are encountered and unrest in the society emerges (Englisch, 2018).

The technological revolution that develops within the framework of the fourth industrial revolution will manifest itself in the enormous economic, social and cultural change that is almost impossible to predict. It can be said that the recent industrial revolution will have an impact on growth, employment, nature of work, governments, countries, regions and cities, community, identity, morality and ethics (Schwab, 2017).

It cannot be denied that the fourth industrial revolution will create major changes in the workforce and fields of work all over the world. This means that in the new era, as technology advances, low-skilled workers will be reallocated to tasks that are not sensitive to computerization (tasks that require creative and social intelligence). However, workers will need to acquire creative and social skills to win the race (Frey & Osborne, 2017). Governments can create programs to solve these problems, to train skilled labor and to adapt to developing technological changes (Abbott & Bogenschneider, 2018).

The impact of the fourth industrial revolution on employment is handled in two ways, positive and negative. According to those who argue that it will have a negative effect, firms will decrease their labor demand with the industrial revolution and give up labor intensive production. Robot workers will replace human workers. This situation will cause human workers to be unemployed and thus the problem of unemployment will emerge. According to the authors who stated that it can have a positive effect on employment, the demand for new products and services will increase with the industrial revolution and new business areas will emerge in the face of increasing demand (Erdoğan & Karaca, 2017). But the fourth industrial revolution, whether positive or negative, will undoubtedly have a significant impact on the workforce all over the world.

Microsoft's founder Bill Gates proposed a Robot Tax for robots that would replace manpower. According to this tax, the advantage of employing robots instead of people will be reduced by taking tax from robots and it will be possible to prevent people from losing their jobs. According to the proposed tax, employers who prefer robot employees will pay a tax and the collected taxes will be collected in a fund. Afterwards, this fund will be distributed to the workers who are dismissed due to the use of robot workers and the inequality will be reduced. In this way, the tax from robots can be used for social security for people who lost their jobs (Çetinkaya & Akar, 2018). The proposed tax is the "Pigou Tax" is a corrective tax to reduce the negative externalities resulting from the rapid employment of smart machines. The drawbacks are the collective dismissal of human workers. This situation can cause significant cuts in the labor market and society in the period. It is argued that a tax on the use of robots can slow down this transformation and save time for the labor market.

Tax on robots raises some complex issues from both a local and international perspective. First, a clear and agreed definition of the robot will be required. The uncertainty of the term "robot" makes it difficult to define the tax base. A recently published EU report proposed a definition based on a variety of characteristics for robots, with particular focus on autonomy, self-learning and adaptation (Erdoğan & Karaca, 2017).

So our country if we will evaluate where Turkey is located on the fourth industrial revolution? it is possible to say, Turkey is among the 2nd industrial revolution in the 3rd industrial revolution. According to Eğilmez (2017), it is not a big loss to catch up with the industrial revolution afterwards, but the cost of missing the fourth industrial revolution is quite high.

The highly educated workforce are necessary for easing the compliance of Turkey's fourth industrial revolution. It's in Germany-China cooperation on vocational education and training should be included in Turkey. At the same time, the share of R & D expenditures should be increased. Stable strategies should be established with real sector, academia and government cooperation. Policies should be carried out to prevent brain drain abroad. Our country should not miss the opportunity to change its role in the global economy with its young, growing and internalized workforce structure with the new revolution (Genç, 2018).

## Applicability of a possible robot taxation in Turkey

When the current situation is evaluated, it seems quite difficult for us to adapt to the fourth industrial revolution. However, although difficult, it is necessary to be legally prepared for possible technological developments. The taxation of robots, which is very important for the last industrial revolution comes up. Taxation of robots in terms of Turkish Tax System; The robot can be handled in two different ways: robot pays tax and tax on the robot (Çetin, 2018).

From a first point of view, robots must be considered taxpayers to pay taxes. Article 8 of the Tax Procedural Code defines the taxpayer as a natural or legal person with a tax liability. In the following article, it is stated that the legal capacity is not a requirement for the taxpayers. When this article is taken into consideration, the capacity of rights will be sufficient for the obligation. In this context, Article 8 of the Turkish Civil Code states that every human being is entitled to rights and that all people are equal in being entitled to rights and debts within the legal order. When the said articles of law are evaluated together, human beings are the basis of our legal system. Therefore, the fact that robots are taxpayers as real persons can lead to controversy. In order for robots to be accepted as real person taxpayers, the necessary legal arrangements must be made. From a different perspective, robots can become VAT payers. For example, robots will provide goods and services with considerable autonomy in some potential applications such as taxi driving. Considering VAT as an indirect tax and considering that the taxable person acts as a tax collector for the state, the robot, which includes only a certain degree of legal and financial autonomy, must be entitled to be a taxable person. Robot can be taxable if certain robots have legal personality and thus customers can enter into contractual relationships with them, and only if the price paid to them is part of the financial funds legally attributed to such robots for VAT (Englisch, 2018).

When the issue of tax payment of robots is evaluated within the scope of legal personality starting from the Tax Procedure Law (Art.8-9), Article 47 of the Turkish Civil Code defines that the legal entity is organized as individual assets and independent groups of goods that are designated for a specific purpose. According to these explanations, it is not possible to assign a legal entity to the robots.

The tax on the robot is valid only if the robot is accepted as an item (Çetin, 2018). It will be appropriate to examine the issue of tax on robot from three different perspectives: taxes on income, taxes on expenditures and taxes on wealth.

Taxes on income are divided into two as Personal Income Tax (PIT) and Corporate Tax (CIT). PIT consists of seven income elements. Real property income, which is one of these seven income elements, is regulated in the 70th and the following articles of the Income Tax Code. Article 70 of the PIT Code states that the income obtained from the renting of goods and rights is real property income (PITC Art.70). In this context, the income to be obtained from the leasing of robots as goods or rights may be subject to PIT as real property income. However, in the 80th and subsequent articles of the PIT Code, other gains and revenues are also mentioned. It is stated that the gains arising from the disposal of the goods and rights stated in the repeating article 80 of the PIT Code are the increase in value. Considering this article of law, it would be appropriate to tax the income that will be generated in the event that the robots are disposed of as goods or rights. Considering 82/3. article of the same law and the compensation received for the transfer of tenancy rights of the real estates should be taxed as incidental earnings. At this point, the income to be obtained by the transfer of the tenancy rights of the robots may be subject to Personal Income Tax as incidental earnings. The income of the corporate taxpayers, who obtain the elements of income in the Income Tax Code, should be taxed in accordance with the article 6 of the CIT Code, taking into account the provisions of the commercial income in the Income Tax Code. In this context, the income obtained as a result of renting, disposing of the robots dealt with in accordance with the Income Tax Code as a property or right and transferring the tenancy right can be taxed as real property income, value increase gain and incidental gain. These matters should be subject to Corporate Tax as corporate income in accordance with the Corporate Tax Code (Art.6).

When an assessment is made in terms of taxes on expenditures, the subject of value-added tax, which is a type of expenditure tax, is the delivery of goods and services performed within the scope of commercial, industrial, agricultural and professional activities, all kinds of goods and services imports and deliveries and services arising from other activities in Turkey. At this point, individuals and institutions producing and benefiting from robotic technology can become taxpayers according to the Value Added Tax Code (Art.1).

When the Motor Vehicles Tax Code (Art.1) is taken into consideration within the scope of taxes on wealth, the subject matter of this tax consists of registered motor vehicles and aircraft and helicopter. Within this scope, it is possible that the robots are considered as motor vehicles provided that the robots are registered in an official register and that the person or institution owning the robot is a taxpayer of Motor Vehicles Tax.

## Conclusions

From the past to the present, there have been four major industrial revolutions. Today, we are experiencing the fourth industrial revolution that is the last revolution. The fourth industrial revolution is a revolution put forward by Germany that aims to completely change the industrial processes. Robots have an important place in this revolution. With the inclusion of robots in the production process, the need for manpower will be reduced and this will create unemployment problem. With the inclusion of robots in the production process, the need for manpower will be reduced and this will create unemployment problem. It is aimed to reduce inequality by paying the unemployed individuals from this fund. It would not be wrong to consider this proposed tax as "Pigou Tax". Because, with this tax, negative externality caused by robots is tried to be reduced.

Current situation, Turkey's adaptation to the fourth industrial revolution seems to be difficult. However, it is necessary to be legally prepared for possible technological developments. Robots, one of the important elements of the revolution in question, and thus the taxation of robots, is a subject that needs to be addressed. Taxation of robots; can be considered from two different angles as robot tax payment and tax on the robot. From a first point of view, robots must be considered taxpayers to pay taxes. In view of the taxpayer definition in the Tax Procedure Law, it is not possible for robots to be regarded as real persons or legal entities. In another aspect, robots can be VAT payers. For example, robots will provide goods and services with considerable autonomy in some potential applications such as taxi driving.

The issue of tax on robot has been examined from three different perspectives: taxes on income, taxes on expenditures and taxes on wealth.

When evaluated within the scope of taxes on income; the income to be obtained from the leasing of robots as goods or rights can be evaluated as real property income. If the robots are disposed of as goods or rights, the revenue to be obtained can be evaluated as the gain of value increase. It has been concluded that the revenues to be obtained through the transfer of the tenancy rights of the robots may be subject to Income Tax as incidental earnings. In accordance with the Income Tax Code, the revenues obtained as a result of renting, disposing of the robots as goods or rights and transferring the right of tenancy can be taxed as real estate capital income, value increase gain and incidental gain. It is concluded that these situations may be subject to Corporate Tax as corporate income pursuant to Article 6 of the Corporate Tax Code.

The assessment of taxes on expenditure, it was reached that it is possible for taxpayers to produce and utilize robotic technology. Within the scope of taxes on wealth, it is concluded that the person or institution that owns the robot is likely to be a Motor Vehicles Tax payer provided that the robots are registered in an official register.

When the current legal regulations are evaluated, the above-mentioned possibilities may arise in terms of taxing robots or taking taxes on the robot. However, with the new legal regulations, the status of robots may change and different taxation procedures may arise.

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